

A New Species of the Genus *Leptaulax* (Coleoptera, Passalidae)  
from Phu Pan, Laos

**Masahiro KON**

Graduate School of Environmental Science, The University of Shiga Prefecture,  
Hassaka-cho 2500, Hikone, 522–8533 Japan,

**Yutaka JOHKI**

Graduate School of Human Life Science, Showa Women's University,  
Taishido 1–7, Setagaya, Tokyo, 154–8533 Japan

and

**Kunio ARAYA**

Graduate School of Social and Cultural Studies, Kyushu University,  
Ropponmatsu 4–2–1, Chuo-ku, Fukuoka, 810–8560 Japan

**Abstract** A new species of the genus *Leptaulax* is described from Phu Pan, Laos under the name of *L. matsumotoi* sp. nov. This species can be distinguished from all the other known congeneric species by having a combination of the following characters: the upper lateral surface of the mandible with a strong longitudinal hollow; the paramere of the male genitalia projecting like an earlobe at the distal end.

Recently we have had an opportunity to collect many passalid beetles (Passalidae, Coleoptera) from Phu Pan, Laos. After a close examination, we found an undescribed *Leptaulax* species in the collection. Thus, we are going to describe a new species of *Leptaulax* from Laos.

In describing the present new species, we adopt the terminology of GRAVELY (1914) and IWASE (1996) for external morphology and LINDROTH (1957) for male genitalia.

*Leptaulax matsumotoi* KON, JOHKI et ARAYA, sp. nov.

(Figs. 1–6)

*Description of holotype.* Male. Length from apical margin of clypeus to apices of elytra 17.6 mm. Body flat, polished, black on dorsal side, dark reddish brown on ventral side.



Fig. 1. Habitus of *Leptaulax matsumotoi* sp. nov., scale 5 mm.

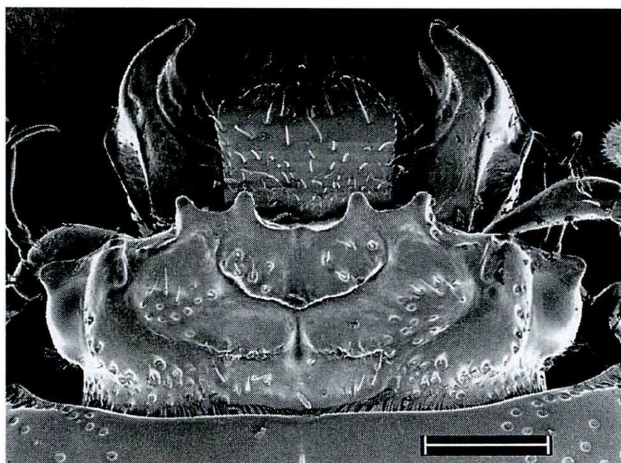
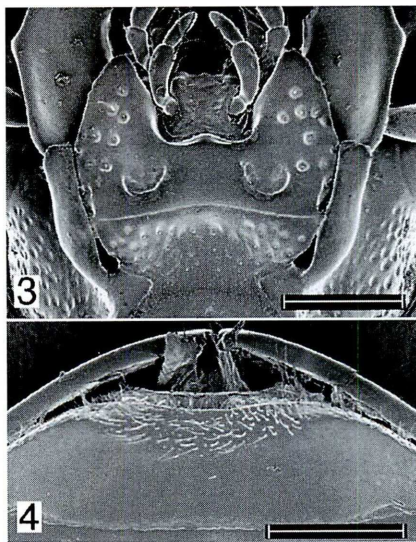


Fig. 2. Head of *Leptaulax matsumotoi* sp. nov., scale 1 mm.

Antenna with three moderately long lamellae, the lamella of tenth segment longer than those of eighth and ninth segments; first segment of antenna mat on dorsal surface. Outer margin of mandible with strong angle at the middle point, moderately curved inwards in anterior portion, almost straight in posterior portion; upper lateral

surface of mandible with strong longitudinal hollow in posterior portion, with a few hairs in the hollow. Upper tooth represented as a small swelling, located a little prior to outer angle of mandible. Left anterior lower tooth slightly smaller than left lowest terminal tooth, larger than right anterior lower tooth; right anterior lower tooth smaller than right lowest terminal tooth. Labrum rectangular, sparsely hairy on upper surface, more densely hairy in anterior and lateral margins, with anterior margin slightly concave, lateral margins divergent anteriorly. Ligula without distinct median ridge. Mentum polished, with a few large setiferous punctures in lateral portion, with scar like a semi-circular arch opening forwards; anterior margin of mentum convex forwards in central portion. Hypostomal process hairless, smooth and polished, transversely truncated at distal end, weakly concave in outer lateral margin, without longitudinal groove on ventral surface. Anterior angle of head not prominent forwards; canthus polished on upper surface; outer angle of canthus not protrudent forwards. Eye small, not projecting laterally beyond canthus. Inner tubercle slightly more prominent forwards and slightly broader than the outer one; distance between inner tubercles 1.8 times as long as that between inner and outer tubercles; median tubercle distinct though small. Distal end of parietal ridge reaching supra-orbital ridge though indistinct in distal portion; frontal ridge slightly curved inwards in distal portion, effaced behind inner tubercle. Frontal area almost twice as wide as long, with a few setiferous punctures; median keel of frontal area indistinct.

Pronotum rectangular, sparsely punctured in antero-lateral portion and in lateral scar, with distinct median sulcus; lateral margin slightly curved inwards in anterior portion; anterior angle slightly prominent forwards; posterior angle rounded. Proster-



Figs. 3–4. Ventral side of *Leptaulax matsumotoi* sp. nov.; 3, mentum and ligula, scale 1 mm; 4, last abdominal sternite, scale 1 mm.



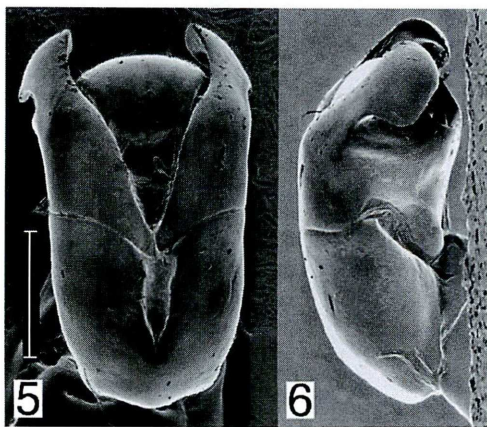
num mat in anterior portion close to head, smooth and polished in middle and posterior portions. Mesothoracic episternum smooth; mesosternum hairless, with shallow and fine punctures in central portion, mat in lateral scar, rugged in the area posterior to lateral scar; anterior angle of scar acute. Central area of metasternum shallowly punctured in the middle, wrinkled in anterior portion between middle coxae; anterior intermediate area rough a little in anterior portion close to middle coxa, smooth in outer and posterior portions; posterior intermediate area shallowly punctured in inner portion, smooth in outer portion; lateral area narrow, wrinkled and hairless. Elytron polished except in punctures, hairy at humeri; lateral grooves of elytron with transverse punctures, slightly wider than adjacent ribs. Upper and outer surfaces of middle and hind tibiae polished.

Third to fifth visible abdominal sternites finely and densely punctured in lateral portion close to antero-lateral corner, impunctate and smooth in central portion; sixth visible abdominal sternite with hairs in postero-central portion; posterior margin of sixth visible abdominal sternite slightly concave, not distinctly margined.

Penis rounded in anterior margin in ventral view, almost covered with paramere in lateral portion; parameres connected with each other on dorsal side, projecting like earlobes in distal end, more protrudent than penis in distal end, with distal margins acutely V-shaped in ventral view; basal piece as long as penis in ventral view, with deep notch at the middle of distal margin on ventral side.

*Variation.* No sexual dimorphism is evident. Measurements for paratypes (mean  $\pm$  SD, range), 16.9 mm  $\pm$  0.75, 15.2–18.3 mm (N=35).

*Type series.* Holotype: 1 ♂, Phu Pan, 1,800 m in altitude, Houapan, Laos, 4–III–2003. Paratypes: 16 ♂♂ and 19 ♀♀, Phu Pan, 1,800 m in altitude, Houapan, Laos, 4–7–III–2003. All the specimens were collected by T. MATSUMOTO, R. IWATA, M. KON, K. ARAYA, S. KITADE, C. RICHARD, S. KOSHIKAWA, H. WAKAHARA and local people. The



Figs. 5–6. Male genitalia of *Leptaulax matsumotoi* sp. nov., scale 500  $\mu$ m; 5, ventral view; 6, right lateral view.

holotype is deposited in the collection of the National Science Museum (Natural History), Tokyo.

*Etymology.* The present new species is named in honor of Prof. Tadao MATSUMOTO, Tokyo University, who has been giving us invaluable advice and encouragement.

*Ecological notes.* The present new species lives in colonies under the bark of dead logs.

*Notes.* The present new species can easily be distinguished from all the other known congeneric species by the following combination of characters: the hypostomal process without a longitudinal groove; the upper lateral surface of mandible with a strong longitudinal hollow in the posterior portion; the humeri of elytron hairy; the lateral grooves of elytron with transverse punctures; the sixth visible abdominal sternite with hairs in the postero-central portion; the paramere of male genitalia projecting like an earlobe in the distal end.

### Acknowledgments

We thank T. MATSUMOTO, R. IWATA, S. KITADE, C. RICHARD, S. KOSHIKAWA and Y. TOKUYASU for their field assistance and warm companionship. Thanks are also due to H. and S. WAKAHARA and the villagers of Ban Saleui for their kind supports. This study is supported in part by a Grant-in-Aid from the Japan Society for the Promotion of Science (No. 14405013).

### 要 約

近 雅博・常喜 豊・荒谷邦雄：ラオスの Phu Pan からのヒラタクロツヤムシ属の1新種。—— ラオスの Phu Pan で採集されたヒラタクロツヤムシ属の1新種を、*Leptaulax matsumotoi* sp. nov. と名付けて記載した。この種は大顎の側面上側に強い溝を持ち、雄交尾器の paramere の末端が耳たぶ状に突出することにより他の同属既知種から区別できる。

### References

- GRAVELY, F. H., 1914. An account of the Oriental Passalidae based primarily on the collection in the Indian Museum. *Mem. Ind. Mus.*, **3**: 177–353.
- IWASE, K., 1996. Some new passalid beetles of the genus *Leptaulax* (Coleoptera, Passalidae) from the Greater Sunda, with a key to the species of the genus *Leptaulax* from the Greater Sunda. *Jpn. J. syst. Ent.*, **2**: 219–234.
- LINDROTH, C., 1957. The principal terms used for male and female genitalia in Coleoptera. *Opusc. ent., Lund*, **22**: 241–256.